

FINAL REPORT
ON THE
REVISION OF SETTLEMENT
1889-91
OF THE
MUKTSAR PARGANA
AND
MAMDOT JAGIR
OF THE
FEROZEPORE DISTRICT
IN THE
PUNJAB.

BY
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Published by Authority.



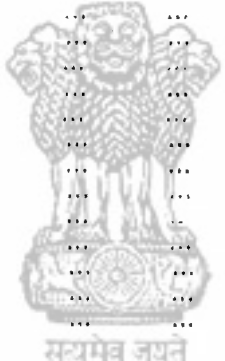
L a h o r e :
THE "CIVIL AND MILITARY GAZETTE" PRESS,

Contractors to the Punjab Government.

1892.

TABLE OF CONTENTS.

Final Report on the revision of Settlement of Muktsar and Mamdot.

PARA.	SUBJECT.	PAGE.
1	Tract under settlement	1
2	Area	<i>ib.</i>
3—5	Natural description	<i>ib.</i>
6	Population	2
7	Fiscal history	<i>ib.</i>
8	Assessment	3
9	Increase of cultivation	4
10	Revenue rate	<i>ib.</i>
11	Distribution of revenue	5
12	New assessment in Muktsar	<i>ib.</i>
13	Assessment of Mamdot	<i>ib.</i>
14	Measurements and records of right	8
15	Administration papers	10
16	Cesses (village)	<i>ib.</i>
17	Assessment of Canals	11
18	Canals of Mamdot	<i>ib.</i>
19	Jágir of Muktsar	<i>ib.</i>
20	Jágir of Mamdot	12
21	Zaildárs	<i>ib.</i>
22	Ináms	13
23	Term of settlement	<i>ib.</i>
24	Patwáris	<i>ib.</i>
25	Charge of settlement	<i>ib.</i>
26	Notice of officers	<i>ib.</i>
27	Cost of settlement	<i>ib.</i>
 सत्यमेव जयते		
No.	APPENDICES.	
I	List of Government notifications	14
II	Statement showing progress of measurement work	15
III	Statement of Revenue and Judicial business done	16
IV	Statement of cost of settlement	17
V	Rules for annual assessment of revenue due on account of irrigation } from the District Inundation Canals in Ferozepore District.	19 and 20
VI	Alluvion and Diluvion Rules for Zira, Ferozepore and Muktsar } Tahsils, Ferozepore District.	21 to 25

FINAL REPORT ON THE REVISION OF SETTLEMENT OF MUKTSAR AND MAMDOT.

By *H. B. Francis, Esquire, C.S.*—1889-91.

1. The operations of the revision of settlement herein reported comprise the Muktsar pargana as assessed by Mr. E. L. Brandreth in 1853-54, and the Jágír of the Nawáb of Mamdot, which was annexed in 1856, and was partly attached to the Muktsar Tahsíl and partly to the Ferozepore Tahsíl. It is the same tract which was settled in 1872-73 by Mr. W. E. Purser together with the Montgomery District. It forms all that part of the district which lies south-west of the Farídkot State, excepting the Fázilka Tahsíl which was added to the district in 1884.

Area.

2. The area of the tract is as follows :—

	Square miles.
Muktsar pargana	702
Mamdot jágír :—	
In Muktsar Tahsíl	234
In Ferozepore „	142
Total	1,078

3. But for the break caused by the intervention of foreign territory Muktsar would be a continuation, in its southern part, of the Mabráj Circle of the Moga Tahsíl; in its central part a continuation of Moga proper; and in its northern part a continuation of the Lower Rohi, or Mudki plain, which forms the higher portions of the Zíra and Ferozepore Tahsíls.

4. Mamdot consists, on its west side, of a belt of alluvial land running for 40 miles along the left bank of the Sutlej, with a width of about 6 miles from the river, and on its east side is a continuation of the northern part of Muktsar and of the Mudki plain.

Central Muktsar is a smooth plain of firm soil, which but for its scanty rainfall of about 14 inches annually would be fertile. The southern portion is sandier and still more arid. The northern part is a very sandy tract, which was apparently cut up and redeposited by the Sutlej some four or five centuries ago, and is 15 or 20 feet lower than the central plateau at the line where the two meet. The water-level in this part of the tahsíl is at a moderate depth of about 40 feet, but the water is generally too saline to use for irrigation. In the rest of the tahsíl the depth of the wells is prohibitive, ranging from 100 to 180 feet. But fortunately all but the northern tract is now fully watered by the Sirhind Canal. The jágír of Guru Har Sahai, consisting of 14 villages on the extreme north of the tahsíl, is topographically a part of Mamdot; the western part of it is watered by wells and by the Nawáb's inundation canals constructed by Colonel Grey. These canals also irrigate a small area in other villages of Muktsar adjoining Mamdot.

5. The people of central and southern Muktsar are mainly Sikh Játis, with some villages of Bhattís and other Muhammadan tribes. In the northern portion the Muhammadan element is more prevalent. Almost the whole of the southern part of the tahsíl about Kot Bhai is held in jágír by religious leaders of the Sikhs, and the Sodhís enjoy some large grants in the northern part of the tahsíl besides the jágír of Guru Har Sahai.

A branch of the Rájputána-Malwa (State) Railway traverses the tahsíl from Kotkapúra to Fázilka *via* Muktsar town.

Further particulars will be found in the revised edition of the district Gazetteer.

The riverside portion of Mamdot has a soil of hard, grey, alluvial mud, which requires much water for its cultivation, and except in the part nearest

Ferezepore, crops can hardly be raised without irrigation. Almost the whole tract, however, is either inundated annually by the river, or is irrigable by Colonel Grey's inundation canals, besides which most of the intermediate villages lying beyond the limit of river inundation are plentifully supplied with wells. The sandy tract adjoining Muktsar is also fairly well irrigated by the inundation canals.

The population in the eastern part of Mamdot is of the same character as that of northern Muktsar; in the intermediate villages Aráins are most numerous; Dogars occupy most of the riverside villages, interspersed with a few settlements of a low Sikh tribe called Mahtams, but in the villages nearest Fázilka Dogars give place to the allied tribe of Wattús. Mamdot has two towns, Mamdot in the northern portion, and the newer capital, Jalalabad, founded by Colonel Grey, in the south.

Population.

6. The population of the whole tract under Settlement was as follows in 1868, 1881 and 1891:—

						1868.	1881.	1891.
Muktsar	...	...	...	...	...	73,295	74,486	108,620
Mamdot	...	...	...	...	...	45,708	63,609	92,829
Total						119,003	138,095	201,449

Fiscal history.

7. Muktsar was at the time of its annexation, in 1846, a part of the Lahore dominions.

It was assessed by Mr. E. L. Brandreth in 1853-54 for 10 years at a sum of Rs. 62,729. That settlement was allowed to run on until 1872-73, when Mr. Purser revised it. He altered the rates as follows:—

Assessment Circle.						Rates of 1854, annas per acre.		Rates of 1872, annas per acre.	
						As.	p.	As.	p.
Kot Kapúra	...	...	...	...	...	6	0	7	0
Muktsar Utár	...	...	...	...	...	4	10	6	0
Ditto Hithár	...	...	...	...	...	5	1	5	6
Rohi	...	...	...	...	...	4	9	6	0
Guru Har Sahai	...	...	...	...	...	8	0	6	0

There had been an increase of 81 per cent. in the cultivated area since Mr. Brandreth's time, and the revision produced an increase of 56 per cent., the new revenue being Rs. 97,877, rising to Rs. 1,01,500.

Mamdot had been summarily assessed in 1856 at Rs. 33,788, rising to Rs. 45,770. Mr. Purser raised the revenue in 1872-73 to Rs. 67,440, an increase of 50 per cent. This increase was due to increased cultivation and well-irrigation, for the incidence of the revenue was left nearly the same as before.

In the autumn of 1888, having nearly finished the Revised Settlement of the three northern tahsils of the Ferozepore district, I was directed to report upon a proposal for me to undertake, immediately thereafter, the revision of the Settlement of Muktsar and Mamdot, though the term of Mr. Purser's Settlement had still some years to run. I reported accordingly in November 1888 upon the financial prospects of the operation, and estimated that the work would take two and a half years, beginning from April 1889, that it would cost rather more than a lakh of rupees, and that the probable enhancement of revenue for Government and the Jágirdárs would be nearly one lakh of rupees annually. The undertaking was sanctioned by the Government of India in April 1889 (Punjab Government's No. 83 of 22nd March 1889 and Government of India's No. 294-15 B-2 of 26th April 1889), and a revision of assessment was ordered by Gazette Notification No. 122, dated 1st May 1889. Orders to make a revision of the record of rights were not gazetted until 25th May 1891.

8. I commenced the assessment inspection of the villages of the Muktsar tahsil, 168 in number, in November 1889, and finished that work in February 1890. In March I submitted the preliminary report on the arrangement of assessment circles, average prices of grain, yields of crops, rates of rent and half net assets, as prescribed by Financial Circular No. 39 of 1888. In this report I proposed to retain the existing assessment circles formed by Mr. E. L. Brandreth in 1853-54, which had been left unchanged by Mr. Purser in 1872.

These were as follows :—

- (1). The Rohi which occupies the south of the tahsil about Kót Bhai.
- (2) and (3). The Utár or central portion, divided into two parts—Kot Kapúra in the east, and Muktsar in the west.
- (4). The Hithár or sandy plain on the north, and
- (5). The Guru Har Sahai villages.

I showed that average prices had risen by about 40 per cent. since 1872. The yield of ordinary crops in the best part of Muktsar I estimated at about 30 to 37 per cent. lower than the corresponding crops in Moga. But I put forward as the most important elements in my estimate of the assessable value of land, in different parts of the Muktsar pargana and in the whole pargana as compared with Moga, the following two factors :—

- (1). The proportion of successfully cropped area obtained on un-irrigated land in an average year, and
- (2). The fraction of the whole crop which the landlord receives as rent from the cultivators after defraying agricultural expenses.

The first of these two factors varies in value from over 80 per cent. in the north-east of Muktsar to less than 40 per cent. in the south-west, and the second of them varies in the same general direction from one-half to one-fourth. I showed the local variations of these two factors graphically upon a map. A reference to that map will show that these two causes of variation work to some extent in concert, the area in which crops are most successful nearly corresponding, for instance, with that in which the landlord's share is one-half ; but that the curves which they form do not well agree with the boundaries of assessment circles. The Kot Kapúra circle, certainly, is almost all included within the area defined by the two sets of curves as in both respects most favoured, and the Kot Bhai circle falls in both sets of curves into a middle place ; but the Muktsar Utár circle comprises within itself some of the highest and also some of the lowest crop averages, and also every grade of rents.

Taking the circles as wholes, the following fractions were found to represent the proportion of an average crop which falls to the landlord's share :—

	Success- ful crop fraction.	Batái fraction.	Result.
Kot Kapúra Utár	·81 ×	·36 =	·29
Muktsar Utár	·56 ×	·26 =	·15
Hithár	·75 ×	·27 =	·20
Rohi	·62 ×	·29 =	·18
Guru Har Sahai	·63 ×	·23 =	·14

Thus, without assuming any particular difference in the average value of an unirrigated crop in different circles, I found the assessable value of the Kot Kapúra Utár circle to be about double that of the rest of the pargana. The exact figures which I arrived at for the half value of the rent were as follows:—

	Annas per acre.
Kot Kapúra Utár	13½
Muktsar Utár	5½
Hithár	7
Rohi	7½
Guru Har Sahai	5½

Cash rents are not common in Muktsar, and vary from Rs. 2 to Re. 1 per *ghumáo*, which is equal to Rs. 2·6 to Rs. 1·3 per acre.

At the time of submitting this report I had roughly assessed each village in the pargana, and was prepared to submit both the assessment report and the detailed village assessments so soon as I should receive orders on the preliminary estimates. The necessary orders reached me in the middle of September, and I then thought it best to keep the assessment report back for a short time so as to be able to refer to the complete agricultural statistics of the year 1889-90 before despatching it. It was submitted in the middle of November.

9. The cultivated area of this pargana had increased from 259,874 to 379,463 acres, an increase of 46 per cent.

10. My proposals were to raise the revenue rates as follows :

	Old rates.	Proposed rates.
Kot Kapúra Utár	7	9
Muktsar Utár	6	7
Hithár	5½	6½
Rohi	6	7
Guru Har Sahai	6	7

That is to say, I proposed an increase of one anna all round except in the Kot Kapúra circle, where I considered that the superiority of assets would allow an increase of two annas per acre. Lands irrigated by the Sirhind Canal were assessed in their unirrigated aspect and it was not proposed to introduce any water-advantage rate.

For lands in the Guru Har Sahai circle irrigated by inundation canals of the Mamdot system, it was proposed that a canal advantage rate should be charged on actual irrigation of each year, as in the Zíra and Ferozepore tahsils, at 12 annas per *ghumáo* (= 14·52 annas per acre) on certain superior kharíf crops, and at 6 annas per *ghumáo* (= 7·26 annas per acre) on inferior kharíf crops and on all rabi crops.

For well lands in the Guru Har Sahai circle a rate of Re. 1 per acre was proposed. As already remarked there is no well-irrigation in the other circles.

These rates were all approved by the Financial Commissioner and by Government, except that the Guru Har Sahai and Hithár rates for unirrigated land were reduced to 6 annas per acre.

The Financial Commissioner's orders were received in May 1891, and the village assessments which were ready were immediately announced by me.

11. The distribution of the revenue by holdings was made in the two following months.

No objections were made to any of the village assessments, nor to the distribution.

12. The new assessment compares as follows with the old one:—

ASSESSMENT CIRCLE.				Old revenue.	New revenue.	Increase.	Per cent.
				Rs.	Rs.	Rs.	
Kot Kapúra Utár	...	...	...	24,760	45,225	20,465	83
Muktsar Utár	...	...	...	22,839	38,315	15,476	68
Hithár	...	...	...	25,930	* 40,036	14,106	54
Rohi	...	...	...	20,819	34,290	13,471	65
Guru Har Sahai	...	...	...	7,152	† 13,800	6,648	93
Total	...	...	...	101,500	171,666	70,166	69

Including an estimated sum of Rs. 1,406 for canal-advantage rate.
 † Ditto ditto „ 1,735 ditto

Of this increase two-thirds was due to increased cultivation, and the remainder to an enhancement of rates, which was more than fully justified by the rise in rents and in the price of agricultural produce since 1872-73.

The whole enhancement since 1853-54 has been 168 per cent. Even now the pargana is assessed at an average of only 7 annas per acre of cultivation.

13. I began the inspection of Mamdot for assessment purposes in November 1890, and completed the work (340 villages) in February. In the same month I submitted the assessment report. The orders requiring a preliminary report on half assets had by that time been withdrawn, and permission had been given to submit all assessment matters at one time, provided that the rent and assets calculations were placed in an Appendix.

I retained Mr. Purser's assessment circles, which were those formed in the summary settlement, viz. :—

- (1). The *Rohi*, or eastern lands adjoining Muktsar, generally sandy.
- (2). The *Dhora*, or high intermediate villages, generally irrigated by wells.
- (3). The *Utár*, a belt of land inferior to the Dhora and lying to the west of it, just above the present high bank of the river.
- (4). The *Hithár*, or land below the high bank, which is generally subject to inundation.

In Mamdot I was obliged to diverge further from Mr. Purser's rates than in Muktsar.

This jágir had been summarily settled by Muhammad Sultan Khan, Extra Assistant Commissioner, in 1856, at the following rates :—

	Cháhi.	Sailába.	Báráni.
Rohi	16 as.	...	6 as.
Dhora	22 „	...	9 „
Utár	19 „	14 as.	7 „
Hithár	21 „	14 „	8 „

Mr. Purser considered these to be “admirable rates, the result of the great experience and local knowledge which the Extra Assistant Commissioner possessed.” But the principle followed by Mr. Prinsep, Settlement Commissioner at the time of Mr. Purser's settlement, was to assess wells at comparatively small lump sums, generally Rs. 12 each, and Mr. Purser apparently followed that system against his own judgment. If he had assessed the well lands in their báráni aspect at Muhammad Sultan's rates and had put only Rs. 12 on each well, the assessment of well lands would have been reduced by about one-third. Mr. Purser, therefore, raised his dry rates considerably above the rates of the summary settlement in order to bring the general pitch of the assessment up to its former level. His rates for unirrigated land were 6 annas per acre in the Rohi, 11 annas in the Utár, 12 annas in the Dhora, and 13 annas in the Hithár. The last of these rates was in reality intended for land inundated by the river. In the Rohi, as there were very few wells to be considered, there was no necessity to exceed the natural rate, and so it was left unchanged, though unirrigated land in that circle is, in fact, more productive than in the Dhora and Utár; but in these two latter circles the land in its unirrigated aspect had to bear some of the revenue which was really due from the wells. Even so the Settlement Officer found in actually assessing the villages that those which possessed old established well irrigation must either have their revenue unnecessarily lowered, or must be assessed much above his circle rates, and he generally left the old assessment of such villages unaltered. Conversely he assessed below rates those villages in the central circles which had an unusual proportion of unirrigated land.

Mr. Prinsep's system having now been disapproved, I framed rates for each class of land more in accordance with the true half assets, as the following table will show :—

	Well land.		Canal land.		Flooded land.		Unirrigated land.	
	Half assets.	Proposed rate.	Half assets.	Proposed rates.	Half assets.	Proposed rate.	Half assets.	Proposed rate.
	Annas.	Annas.	Annas.	Annas.	Annas.	Annas.	Annas.	Annas.
Rohi	19	16	17	7+8	...	...	8	7
Dhora	21	19	18	7+8	...	...	6½	7
Utár	19	17	19	7+8	15	14	5½	7
Hithár	20	18	19	8+8	15	14	6	8

Canal lands are assessed, as in the northern tahsils, with a fixed assessment at dry rates, and are to be charged a canal-advantage rate each year upon land actually irrigated, at the rates mentioned in speaking of the Muktsar assessments, which may be considered as equivalent to about 8 annas per acre all round. With regard to unirrigated lands, I did not go quite as low as my half assets rates, because there is, as a matter of fact, very little really unirrigated cultivation in Mamdot, and the dry rates were wanted mainly as a basis for the fixed assessment of canal lands.

The flooded lands were divided into two classes—(1) those distant from the river and not subject to annual change, which I placed under a fixed assessment, just like other villages, at rates a little lower than the full rate for inundated lands in consideration of the supply of river water being uncertain; and (2) those which are so subject to annual change that they must necessarily be assessed from year to year. This course, perhaps, requires a little explanation in view of the remarks made by Mr. Purser in the 104th para. of his Final Report on the impolicy of neglecting differences in the degree of annual inundation. In the first place, I must note that I found in force no such system as Mr. Purser speaks of for taking into account annual variations in the river floods. In the paragraph above referred to Mr. Purser indicates what he considers should be the dry rate imposed for land that has not been flooded, viz., 8 annas per acre, but the tahsil officials were given no rules for applying a dry rate instead of a flooded rate. Consequently in villages not subject to actual alluvion and diluvion no notice has usually been taken of the extent of actual flooding. If a village ceased to be cultivated for want of water and became distressed, an officer of revenue experience, like Munshi Rām Sahai, Extra Assistant Commissioner, sometimes exempted all the uncultivated area from assessment. Such relief was proper, but of course the lands so exempted should from that time have been watched, and any area again brought into cultivation should have been brought under assessment, and any other new cultivation of waste lands also should have been taken into account. This duty, however, was commonly forgotten. Great inequalities in assessment thus arose, and the general result of the system, or rather of the habitual carelessness with which it was carried out, was a very serious annual loss to Government. I found in remeasuring the Hithār circle that some thousands of acres of culturable land had wrongly been escaping assessment. In my opinion, the work of annually re-assessing with correctness and good judgment so large an area as that to which the extreme limits of the Sutlej floods extend is too heavy to impose upon the ordinary tahsil and district staff, and it is only by reducing the dimensions of their task that we can hope to get it done reasonably well. Again, there is by no means the same danger in the course which I have taken that there was in Mr. Purser's time or in Rām Sahai's. The general advance of Mamdot in civilization under our rule, and in particular the lesson which was afforded to the people by Colonel Grey's canals, has done much to teach even the careless tribes of the riverside the advantage and the necessity of self-help. If the river ceases to send them the water which they require they will easily make cheap unbricked wells which, as the lift is very small, they can work without much trouble; or they can get water from the Nawāb's canals upon payment. It is to be remembered that most of the villages will even now have a part of their lands open to annual revision of assessment. Should any case arise which cannot be otherwise remedied, then in the last resort, all that the Deputy Commissioner will have to do is to obtain sanction to bring the land under the alluvion and diluvion rules.

The results of the reassessment of Mamdot are as follows:—

Assessment Circle.					Former Revenue.	New * Revenue.	Increase.	Per cent.
					Rs.	Rs.	Rs.	
Rohi	...	...	...	...	12,600	37,195	24,595	195
Dhōra	...	...	...	...	19,812	25,320	5,508	28
Utār	...	...	...	...	24,133	30,613	6,480	27
Hithār	...	...	...	...	18,632	20,557	1,925	13
						1,13,685	38,508	
						* 20,036	20,036	
Total					75,177	1,13,721	58,544	78

* Estimated sum for canal-advantage rate.

Thus the whole increase, including canal-advantage rate, is 80 per cent. upon Mr. Purser's settlement, and 170 per cent. upon the summary settlement of 1856. This increase merely represents the advance which Mamdot has made in resources since its annexation, for the new rates are rather lower than those applied in the summary settlement, notwithstanding the great rise which has occurred since then in the price of produce. The incidence on the acre of cultivated land is now only a little over 10 annas, which, considering that two-thirds of the land is irrigated, is light enough.

About Rs. 8,431 will be remitted in the first year of the new settlement on account of protective leases to new wells, and a gradually diminishing sum in each succeeding year. Under the present system of assessing well lands, the value to the zamindars of this concession of protective leases is somewhat larger than under the former system. The amount assessed on each well formerly did not exceed Rs. 12, but the average area privileged on each of the new wells now receiving leases is 20 acres, and the average difference between the rate on well lands and the rate on unirrigated land being 9 to 10 annas the average amount annually remitted is Rs. 14 per well. The area attached to each well averages over 30 acres, but the privilege extends only to so much of the land as was unirrigated at last settlement.

The village assessments were announced in November 1891 and the distribution by holdings was completed in the same month. Only one objection was made to the assessments, and that was by a nearly imbecile old man who had got a petition with him objecting to the new revenue of his village before he heard what amount had been fixed.

Very few objections were made regarding the distribution of the revenue by holdings, but the landowners took the opportunity afforded by the announcement of the distribution lists to make various representations regarding the records which were heard and disposed of according to their nature by the Extra Assistant Settlement Officer or myself, our policy being to encourage parties to say all they have to say now, and to leave as little as possible for future complaints. The attestation of the records, the framing of the administration papers, and the announcement of the distribution of revenue, were in most cases disposed of at the same meetings of the landowners, thus saving trouble to all concerned.

14. The maps made in Mr. Purser's settlement of Muktsar were of remarkable accuracy, and in most villages of the pargana can still be satisfactorily followed on the ground. Though a great deal of waste land has been brought into cultivation since 1872, yet as the waste, instead of lying in large blocks, was interspersed among the cultivated fields, this fact does not render the old maps unworkable. With the exception, therefore, of three or four villages where the looseness of a very sandy soil would not allow any field boundaries to stand for a length of time, or where there had been very extensive partitions of common land, it was not found necessary to have any general re-survey of the Muktsar pargana. The changes which had occurred could all be shown on the face of the old maps. This course was accordingly adopted with the sanction of the Financial Commissioner, and the revision of the maps was completed by the summer of 1890. In making the revision we necessarily checked a large proportion of the old work and corrected it where it was not right. The process has been supervised by me and my native assistants in the same way as new measurements would have been supervised, and I consider that the result is very satisfactory. Very few mistakes can escape notice when work which has been done by one establishment is minutely gone over by another establishment, though either of the two would, in the natural course, be certain to make some mistakes when working by themselves, so that the result of our revision of Mr. Purser's maps is perhaps better than we should have obtained by making a new and independent survey.

In Mamdot, on the other hand, there were two tracts which required a completely new survey, *viz.*, (1) the riverside villages, where all boundaries are quickly obliterated by river action, and (2) the eastern or Rohi villages, most of which had been blocks of waste in 1872, and have since been brought under cultivation by the aid of the inundation canals.

The intermediate villages, where well cultivation had been established before 1872, had not altered; much could be disposed of by the revising process, but fully two-thirds of the *jágir* had to be re-mapped.

At the very commencement of the operations, by the direction of the late Colonel Wace, Financial Commissioner, I laid down a main base upon which the square work of all the riverside villages should be founded, and carried lines from my base across the river into the Lahore district, which was under settlement at the same time, so as to ensure that the maps of both districts should fit into one another. As the course of the river is nearly from north-east to south-west I took a line with a true bearing, as nearly as I could make it, of 225° , and divided it into lengths of 1,414.2 feet to form the diagonals of squares, the sides of which measuring each 1,000 feet should be true to the four cardinal points. Perpendiculars bearing 315° were thrown across the river at several places; points were found upon these perpendiculars by very carefully observing from the Lahore side the intersection of the sides of squares on our side, bearing 0° and 270° ; and the perpendiculars were then connected by a second main base parallel to our own, and subdivided (as also were the perpendiculars) in the same way into lengths of 1,414.2 feet. This rather difficult piece of work was carried out with no other instruments than tall flags, a telescope and the *patwári's* chain, and the lines from different places met with no greater discrepancy anywhere than one foot per mile.

I have since prolonged my base line up to Ferozepore city and connected it with two main stations of the Great Trigonometrical Survey. From calculations based upon the recorded latitudes and longitudes of those stations, I find that real bearing of my base is $2\frac{1}{2}$ minutes east of 225° .

In length I find that my chaining exceeds the calculated distance by 90 feet in 190,250 feet, or 1 in 2,110 supposing my calculation to be correct; but as in a very extensive comparison of our chaining with the Survey Department's data in the northern tahsils we found a contrary difference, viz., that our chained distances were about 1 in 2,000 less than theirs, I do not quite trust the present comparison.

The mapping work was commenced in the cold season of 1889-90, and by the time of the annual records of that year were filed 24,555 fields, with an area of 80,879 acres, had been measured, and 116 villages had been finished.

The remainder of the work, amounting to 42,794 fields, with an area of 113,804 acres, was completed by July 1891, the entire number of villages being 273.

The course of the Sutlej during the last twenty years has generally tended to shift towards the west, and a large area has thus been added to Mamdot at the expense of the Lahore district. Twenty-two villages had come over bodily by sudden changes in the position of the deep stream, and four more whole estates had been gained from the river bed by gradual accretion, besides large increases to the areas of many existing villages. The surveys of these new lands, made from year to year by the *patwáris*, were found to be very far from satisfactory, especially as regards the area of cultivated land brought upon the rent roll, and an important result of our new measurements was to add some thousands of acres of land to the assessable area which had hitherto escaped uncharged.

In 70 villages in Mamdot the old maps were merely revised and brought up to date.

All new measurements were carried out under the rules contained in the *patwári* rules framed under the Land Revenue Act of 1887. Linear dimensions of fields were marked on the maps only in those cases where the scale of the map was not large enough for dimensions to be read off accurately by the application of the *patwáris'* plotting scale. Our new maps on the riverside are all on the scale of 40 *karms* (200 feet) to the inch, and on this scale dimensions can easily be read to single *karms*: but in the Muktsar villages, where the fields are

very large, we retained the old scale of 100 *karms* (500 feet) to the inch. Some of the Nawáb's *chaks* too were mapped on this scale of 100 *karms* to the inch. In the *chaks* in which there are no separate rights in the cultivating plots, we did not consider it necessary to record dimensions on the maps, even though the scale used was the smaller one.

The Nawáb owns about 84 *chaks*, which were for the most part mere blocks of waste in 1872. In only one or two of these *chaks* are there any tenants with occupancy rights. They are let on leases for terms of five years, and new lessees, or set of lessees, on coming into possession, frequently redistribute the land in a way of their own, regardless of former field boundaries. It was, therefore, considered most convenient to map such estates in rather large plots bounded by canal channels, roads or other permanent marks not subject to arbitrary change. Care has everywhere been taken to avoid amalgamating fields to such an extent as to cause inconvenience in making the crop inspections (*girdáwari*). The number of fields has, however, been reduced from about 120,000 to 114,893.

The final attestation of the record of rights required by Section 50 of Land Revenue Rules, Part II, was made by the Extra Assistant Settlement Officer.

15. On a revision of the record of rights being ordered in May 1891, it became necessary to amend the administration papers of last settlement. The order of the clauses was brought into accordance with the rules framed under the present Land Revenue Act, and all matters which have been otherwise provided for by law were excluded, but no substantive alterations were made, unless attested by all the parties concerned.

No tribal code of customs has been prepared, but the code prepared in 1887 in the northern part of the district, will apply equally to the same tribes in Muktsar and Mandot. For the Wattús and the Mahtams the tribal code prepared by Mr. Wilson in Fázilka in 1880 will hold. The code prepared in Muktsar and Mandot in 1872 has been remarked upon in my note on the customs of the northern tahsils as being of little practical use.

16. Lists of village cesses were prepared under Section 145 of the Land Revenue Act in only 9 villages, there being no judicial decision forthcoming in other villages in support of the proprietors' right to levy any cess. The cesses attested consist usually of an annual fee, varying in different villages and for different classes from 8 *ahnas* to Rs. 2, which is paid by village artizans and menials, and occasionally by shopkeepers. This cess may be considered as an acknowledgment that the payers live in the village subject to the proprietors, and as the sites of their houses have generally been given them by the proprietors, and they graze their cattle on the common waste and water them at the common pond or well, it is not unfair. Shopkeepers who have purchased the sites of their houses from the owners or, with the owner's consent, from a previous occupant do not pay. In three villages a cess called *thanapati* or *mudhkhera*, which is a fee of Rs. 5 paid at each daughter's wedding, has been judicially affirmed, and has been entered in the list. Most of the money goes to the menials, but Re. 1 is taken by the proprietors. This cess is sometimes paid even by proprietors. The *malba* or contribution to village expenses has not been included in the list of village cesses made under Section 145, because it is included in "rates and cesses" by Section 3 (9) (e) of the Land Revenue Act, and so is considered as excluded from Section 3 (10). The rate of *malba* has been fixed in the *wájib-ul-arz* in accordance with Appendix D of Consolidated Revenue Circular No. 36.

A separate report has been submitted on the working of the rules, drawn up and provisionally sanctioned in 1886, for the annual measurement and assessment of lands subject to alluvion and diluvion. I have recommended that these rules be now finally sanctioned with one or two amendments, the only important change being that *másh* (*phaseolus radiatus*), which in 1886 was rated as a third-class crop, be transferred to the second class as in the Lahore district.

17. The rules for the assessment of canal-advantage rate on the inundation canals, as temporarily passed by Government, provide that where land is partly inundated by the river itself, and partly by water from a canal, the whole should be charged as canal irrigation, but that the fixed revenue should be reduced from the inundated rates to the dry rate. In the upper tahsils this order of Government has been received with some dissatisfaction, for the canal charges amount in all to about 18 annas per acre, while the difference between wet and dry rates, which is remitted, is only on the average about 5 annas per acre. The best remedy is for the canal managers to avoid allowing any of their water to reach the tract which is inundated by the river, and this course has been recently enjoined by Colonel Grey himself, as Officiating Financial Commissioner. He has also proposed a general rule which, if adopted, will strike at the root of the trouble complained of, viz., that no inundation shall be taken into account as canal irrigation in which the water has escaped from the canal otherwise than by a distributary. But this rule will perhaps be found too sweeping in actual practice. I have reported separately upon this matter also.

18. The canals in the Mamdot Jágir were all made at the expense of the Nawáb, with the exception of the main line of the Jalálwáh in the northern part of the estate. Colonel Grey, in an order issued in 1882, declared that the canal water was primarily required for the Nawáb's own proprietary lands or *chaks*, and that it would not be sold to other proprietors except at a high rate, which he fixed at Rs. 2 per acre, allowing, however, those villages which had given land free of payment for the construction of the canals to have water at half rates. The Nawáb's own tenants were charged only 12 annas per acre. In 1889 the Nawáb raised all these rates by 21 per cent. by charging the same rate upon a *ghumáo* which had previously been charged upon an acre. Government, in Secretary's No. 50 of 22nd November 1889, ordered this step to be retracted and the old rates to be restored. The old rates, however, require some reconsideration, for it is hardly reasonable for a whole village to enjoy a reduction of Re. 1 per acre, because, perhaps, a single proprietor has given a small area for a part of the canal. Colonel Grey has, therefore, now proposed that an uniform rate, viz., Re. 1-8 per acre, shall be charged to all irrigators, not tenants of the Nawab, and that the Nawáb shall pay other proprietors a liberal rent for all lands occupied by his canal works. It would make the rent statistics less misleading if the Nawáb were to charge his own tenants the same water rates as other persons, and to take less rent, as he would then have to do, for his lands in their unirrigated aspect. Suppose, for instance, a *chak* is wholly irrigated, that the water is charged at 12 annas instead of Re. 1-8, and that the rent is Re. 1-6 per acre. The real letting value of the land itself is in that case only $22-12 = 10$ annas, and the half assets rate is not 11 annas but 5 annas. If the water were charged at full rates this fact would at once be manifest.

It has been decided by the Government orders upon the Mamdot Assessment Report, that the Nawáb as *jágirdár* shall receive a two-thirds share of the canal-advantage rate, as he does of all other component parts of the land revenue demand, but that half of his share will be taken by Government as its royalty upon the Sutlej water; so that the Nawáb's share of the canal-advantage revenue is to be one-third and the Government share two-thirds.

19. In the Muktsar pargana there are Rs. 44,576 released or assigned to the Sodhis of Dhillwan and Batar, the *Jágir and khálsa revenue*. Bhais of Arnali and others. One village is assigned for the maintenance of the celebrated Sikh temple and sacred tank at Muktsar.

In Mamdot one village is held revenue free by the Sodhis, and one by Saiads of Hujra Shah Mukim in Montgomery. Some villages on the riverside are held in *jágir* by *Rájpúts* of Betu in the Lahore district whence the villages were transferred by change in the course of the river. It is proposed to retransfer these villages to their proper district.

20. The Nawáb of Mamdot was deprived of his independence on account of his misgovernment in 1856, and his status is now merely that of a *jágírdár*. His revenue is collected for him by the *tahsíl* establishment. In consideration of all administrative, judicial, and revenue charges being borne by Government, one-third of the *jágír* income is credited to Government in the accounts and two-thirds are drawn by the Nawáb.

In case of changes in the deep stream of the river transferring Lahore villages to the Mamdot side, or Mamdot villages to the Lahore side, it was decided by Government in 1878 that the Nawáb should neither lose nor gain; his *jágír* consisting always of those villages which belonged to it in 1856. Nine villages named in margin, however, which had been formed by accretion between 1856 and 1878, were allowed to remain *jágír*. Some exceptions have since been allowed to occur to the rule laid down by Government in 1878, and a reference has been made regarding them.

1. Sher Singhwála Nau-barámad.
2. Chak Jadíd Mah-múdko.
3. Chak Bhangewála.
4. Dona Bahádurke.
5. Chak Jaimalwála.
6. Chak Sarkár Maházi Bahádurke.
7. Chak Raoko.
8. Chak No. 1, Maházi Bahádurke.
9. Chak Bahádurke Naubarámad, now called Dona Bahádurke.

21. Zaildárs were appointed by Mr. Purser in 1873, and no change has now been made in their circles except in one case in Muktsar where the *zail* boundary was altered to correspond with the boundary between two police stations. The *zail*-book has been written up to date. The *zaildárs* have hitherto had to collect their dues from the villages as a separate cess, but they will in future be paid by Government by deduction from the revenue of the villages in which they reside. One or two who happen to reside in *jágír* villages will perhaps have to be paid from the *tahsíl*.

Chief headmen were appointed in every village in 1873. Even where there was only a single headman he was made chief headman. Their remuneration was met by an extra cess of one per cent. on the revenue. With the authority of Government this office has now been abolished as useless, and the land-holders have been saved this, as well as the *zaildári* cess.

The cesses still remaining are as follows:—

					Per cent.*
					Rs. a. p.
Headman or <i>lambardár</i>	...	...	...	...	5 0 0
Patwári	...	...	...	...	4 11 0
Local rate	...	...	...	...	10 13 4
Total				...	20 8 4

The *patwári* cess was formerly 5 per cent. in Muktsar, and 4 per cent. in Mamdot, excepting the villages subject to river action, where it was $5\frac{1}{2}$ per cent. But it has now been equalized at the same rate as in the northern *tahsils*.

In certain villages referred to in the 111th paragraph of Mr. Purser's final Settlement Report, it was decided by Government at the time of that settlement that the Nawáb, who receives in some cases 25 per cent., and in other cases 15 per cent. upon the amount of the revenue as "superior proprietor," should pay in the first class of cases half the cesses, and in the second class one-sixth. In some of these villages the Nawáb was himself made full proprietor of a large part of the land, but as his share was mostly waste and unassessed, he would have paid no part of the cesses but for this order. His lands are now fully cultivated, and I doubt whether this order should be applied in the present settlement. I have made a reference on this subject.

22. I have proposed *samíndári ináms* or cash grants from the revenue in favor of men of local influence who assist in Government work. The total of amount of these grants is limited to $\frac{1}{4}$ th per cent. of the new assessment.

23. The term of settlement has still to be finally fixed by Government. As the northern tahsils have been settled for 30 years, expiring in Rabi 1916 for Moga, and Rabi 1917 for Zíra and Ferozepore, it may be convenient to fix 25 years for Muktsar and Mamdot, in which case the term will expire in Mamdot at the same time as in Moga, and the term in Muktsar will expire at the same time as in Ferozepore and Zíra. Thus the whole district might be reassessed, if necessary, within a period of two years.

I do not expect that an increase of more than 20 per cent. will be obtainable at the next revision of assessment, and I hope that the revision will not be made on statistical materials without a thorough local inquiry into the state of each village at that time. This estimate does not include any water-advantage rate which may be leviable under the Canal Act.

24. The number of patwáris in the tract under settlement was originally 66, viz., 40 in Muktsar and 26 in Mamdot, but in Mamdot the circles on the riverside were generally much too large and unmanageable. We increased the number to 41 in Muktsar, and at first to 34 and finally to 36 in Mamdot. Of the patwáris in office at the commencement of operations 6 have been dismissed, 7 have resigned, and 11 have retired in favor of their sons, or with gratuities.

25. I was in charge of the settlement, throughout, with the exception of three months' absence on privilege leave in 1889 and two months' privilege leave in 1891. On the former occasion, the Deputy Commissioner took charge, and on the latter occasion the Extra Assistant Settlement Officer carried on the work. But I have had to perform the duties of Deputy Commissioner in addition to my own work for two months in 1890 and for four months in 1891. In 1889 I was occupied for a month in inspecting the villages of the Fázilka Hithár circle settled by Mr. Wilson in 1880, with a view to its being decided whether that tract could be put under fixed, in place of fluctuating assessment. I have also had to prepare a revised edition of the Gazetteer of the whole district.

26. This settlement has been carried on without Superintendents or Extra Tahsildárs. We had four Deputy Superintendents—two in Muktsar and two in Mamdot. The Extra Assistant Settlement Officer, Pandit Shankar Dás, has done much work which would ordinarily have been performed by a Superintendent. Pandit Shankar Dás has been very valuable to me. He has passed through every grade of a Settlement establishment and possesses immense experience. He is excellent at arranging for the execution of work and very industrious in supervising establishment; never content, as some officers in his position are, with merely reporting that things are wrong, he always sets them right before passing on. The people like and respect him, and so, as a rule, do the subordinate establishment. Having now seen him at work for seven years I have the highest opinion of the Pandit, and trust he will not have to wait much longer for confirmation in his rank.

Of the Deputy Superintendents the best was Shankar Dás, whose sudden death in the present year I greatly regret. Ralla Rám also did extremely well, and is an unusually careful and industrious man, who should soon rise higher.

27. The cost of the Settlement has been Rs. 1,07,662, as shown in Appendix No. IV.

This sum will be more than recovered by the enhanced revenue received in a single year..

FEROZEPORE :
30th January 1892. }

E. B. FRANCIS,
Settlement Officer.

APPENDIX No. I.

List of Government Notifications issued regarding the Settlement of the Muktsar Tahsil and Mamdot Ilāka of the Ferozepore District.

No.	Date.	Department.	Abstract.
176	10-4-89.	Revenue and Agriculture.	Mr. E. B. Francis invested with the powers of a Collector under Section 27 (1) and (2) of the Punjab Land Revenue Act, 1887.
178	Do.	Do.	Mr. E. B. Francis invested with the powers of a Collector under Section 105 (1) and (2) of the Punjab Tenancy Act, 1887.
122	1-5-89.	Do.	Sanction of Government of India under Section 49 (1) of the Punjab Land Revenue Act, 1887, to undertake general reassessment in the Muktsar Tahsil and Mamdot Ilāka of the Ferozepore District.
358	2-7-89.	Do.	Withdrawal of powers of a Collector from Mr. E. B. Francis in the Ferozepore District (except Mamdot, Moga and Zira Tahsils) under Section 105 (1) of the Punjab Tenancy Act, 1887.
803	4-7-89.	Home Department.	Transfer of Pandit Shankar Dās, Officiating Extra Assistant Commissioner, from Kangra to Ferozepore Settlement.
792	1-7-89.	Judicial.	Pandit Shankar Dās, Officiating Extra Assistant Commissioner, invested with the powers of a Munsiff of 3rd Class within the Ferozepore District under Section 28 (1) of the Punjab Courts Act.
393	19-7-89.	Revenue and Agriculture.	Pandit Shankar Dās, Officiating Extra Assistant Commissioner, invested with the special powers of an Assistant Collector, 1st Grade, under Section 77 (4) b of the Punjab Tenancy Act, 1887.
965	29-10-90.	Judicial.	Mr. E. B. Francis invested with the powers of a Magistrate of the 1st Class within the local limits of the Muktsar Tahsil and Mamdot Ilāka of the Ferozepore District.
6	6-1-91.	Revenue and Agriculture.	Lieutenant F. P. Young, Assistant Commissioner, invested with the powers of an Assistant Collector, 1st Grade, under Section 6 (3), 4, of the Punjab Land Revenue Act, 1887.
338	25-5-91.	Do.	Sanction of Punjab Government to the revision of the existing records of rights for the estates included in the Muktsar Pargana and the Mamdot Jāgīr of the Ferozepore District.
474 (a)	7-8-91	Do.	Pandit Shankar Dās, Officiating Extra Assistant Settlement Officer, invested with the powers of a Collector under Section 27 (1) and (2) of the Punjab Land Revenue Act, 1887.
474 (b)	Do.	Do.	Pandit Shankar Das, Officiating Extra Assistant Settlement Officer, invested with the powers of a Collector under Section 105 (1) and (2) of the Punjab Tenancy Act, 1887.
597	20-10-91.	Do.	Withdrawal of the above powers from Pandit Shankar Das.

APPENDIX No. II.

Statement showing the progress of measurement work made in the Muktesar, Tahsil and Mandot Ilaka of the Ferozepore District.

YEAR (AGRICULTURAL).	Ferozepore (Mandot).				Muktesar Tahsil.				Total.			
	Total number of villages.	Number of fields measured.	Area measured in acres.	Villages completed.	Total number of villages.	Number of fields measured.	Area measured in acres.	Villages completed.	Total number of villages.	Number of fields measured.	Area measured in acres.	Villages completed.
(1st April to 30th September).												
1889	142	150	60	1	367	117	124	1	509	267	184	2
1889-90 .. .. .	..	10,328	28,606	43	..	13,960	52,089	71	..	24,288	80,695	114
1890-91 .. .. .	..	15,585	30,254	57	..	27,209	83,550	100	..	42,794	113,804	157
TOTAL ..	142	26,063	58,920	101	367	41,286	135,763	172	509	67,349	194,683	273

APPENDIX No. III.

General Statement of Revenue and Judicial business performed by each grade of Officers of the Ferozepore Settlement from 1st April 1889 to 30th October 1891.

NAMES OF OFFICERS.	REMARKS.					
	Revenue Court cases decided.	Revenue Officer's cases decided.	Other cases.	Total cases decided.	Criminal cases decided.	Revenue Judicial appeals.
Settlement Officer	174	692	...	866	3	314
Extra Assistant Settlement Officer	1,807	1,170	5	2,782	7	...
Assistant Commissioner	8	7	...	15	...	...
Total	1,789	1,869	5	3,663	10	314
						99
						Revenue Executive appeals.

APPENDIX No. IV.

Expenditures under all Heads from 1st April 1889 to 31st December 1891 of the Ferozepore Settlement.

Major Head of Service.	BUDGET HEADING.	Actual Expenditure.		
		Rs.	A.	P.
LAND REVENUE AND SETTLEMENT CHARGES	Salary and Settlement allowance of Gazetted Officers ...	57,092	11	9
	Travelling allowance of Gazetted Officers ...	3,406	15	0
	ESTABLISHMENT.			
	A.—Settlement Tahsilidars ...	575	12	11
	B.—Office Establishment of Assistant Settlement Officer ...	113	11	6
	C.—Subordinate Permanent Establishment of Settlement:—			
	i. Office Establishment on fixed pay ...	2,625	11	8
	ii. Office Kánungos ...	5,783	13	3
	iii. Deputy Superintendents ...	10,545	15	6
	iv. Field Kánungos ...	10,947	9	0
	v. Menial Establishment... ..	1,664	8	6
	D.—Temporary Establishment ...	4,802	12	6
	Messengers ...	1,993	12	1
	Total Establishment ...	39,053	10	11
	CONTINGENCIES.			
LAW AND JUSTICE—STATIONERY AND PRINTING.	1. Travelling allowance of Establishment ...	481	7	6
	2. Hot and cold weather charges... ..	217	4	5
	3. Tour charges and pay of Khálásís ...	1,994	15	4
	4. Purchase and repair of tents ...	258	5	6
	5. Survey equipments ...	603	7	9
	6. Hutting ...			
	7. Other items ...	1,768	7	3
	Total Contingencies ...	5,323	15	9
	Total Land Revenue and Settlement charges ...	1,04,877	5	5
	Process-serving Establishment ...	112	6	2
	Country Stationery and carriage of Stationery boxes ...	1,525	1	4
	Lithography ...	183	5	9
	Total ...	1,708	7	1
	Office rent ...	963	6	5
	Total Expenditure to date ...	1,07,661	9	1



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APPENDIX No. V.

Rules for the annual Assessment of Revenue due on account of Irrigation from the District Inundation Canals in the Ferozepore District.

1. Canal revenue is charged upon lands irrigated from the inundation canals which produce a kharif crop, or which are watered for the ensuing rabi crop.

2. At the time of the kharif girdawari, the Patwari, in addition to writing the word "nahri" against all crops irrigated from the canals, will write the words "taraddadi nahri" against any cultivated land which has received canal water and has not been sown with a kharif crop, but may produce a rabi crop. Land in depressions which is still submerged at the time of the kharif girdawari will usually not be fit to be sown with a rabi crop, and should, therefore, ordinarily, not be entered as "taraddadi nahri." No entry will be made on account of kharif crops, which have failed, or on account of land benefited by percolation, or for any uncultivated land, unless any landholder has taken water by application purposely for growing grass, in which case, though the canal revenue may not be charged, yet the establishment or *bachh* rate will be charged. No land which pays *sailaba* rates will be recorded as nahri, such land being by Government letter No. 24, dated 4th February 1892, exempt from payment of canal revenue and charges.

3. The field Kanungo, the Tahsildar, and the Naib-Tahsildar will devote special attention to the supervision of the girdawari entries regarding canal irrigation; every canal irrigated village should be seen by the Tahsildar or Naib-Tahsildar during the girdawari. The Mirab should accompany and assist the Patwari. The canal Darogha may inspect the girdawari. The Darogha and the Mirab should bring to the notice of the field Kanungo, or his superior officers, any case where the Patwari is omitting to record irrigation; but the Darogha will not give orders to the Patwari direct. If the fact of water having been received is disputed by the landholder the Patwari will add the word "tanaza" to the crop entry.

4. After completing the girdawari, and sending in his crop abstract, the Patwari will prepare for each village an abstract according to jamabandi holdings of the lands irrigated. The holdings of occupancy tenants who pay rent in cash at rates based upon the Government revenue, and of part owners of a joint holding who pay the revenue of that holding according to the areas of their separate cultivation therein, will be shown separately.

5. The total for each holding will be divided into two heads—(1) superior crops (*ajnas-i-ala*) and (2) others (*ajnas-i-digar*). If part of the irrigation was by lift (*Jhallar* or *Jhatta*) a further detail will be given of flow and lift. Maize, rice, sugar-cane, cotton, and chillies are reckoned as superior crops. The areas of canal crops which failed, and areas of which the irrigation is disputed (*tanaza*) will be added below the totals. The totals will be given in whole kanals, a quarter kanal being neglected and a half kanal being reckoned as a whole kanal.

6. The rates of canal revenue are one-and-a-half anna per kanal (12 annas per ghumao) for superior crops, and three-quarters of an anna per kanal (6 annas per ghumao) for others. Irrigation by lift will be charged at half rates. The sum due at these rates will be stated under the total of each holding in the same detail as the areas, and the amount of cesses will be added.

7. The Patwari will give, for information, to the person or one of the persons responsible for the revenue of each holding the rough slip upon which he has abstracted the fields of that holding.

8. He will make a total for each village in the same detail as above, and forward it through the field Kanungo to the Tahsildar by the 15th of November. The office Kanungo will make a list for the tahsil village by village with totals and the Tahsildar will forward it to the Extra Assistant Commissioner in charge of the canals.

9. The Tahsildar or Naib-Tahsildar will then proceed to announce to the headmen of each village, at some place within the Patwari's circle to which the village belongs, the sums which are due from their village according to the statements made out by the Patwaris. He will receive any further objections which may be made orally or in writing. He will visit each field in which there is a disputed entry, and will report briefly thereon (in the form of a list of fields for each village) for the orders of the Extra Assistant Commissioner. If the amount in question in any village exceeds Rs. 10, the Tahsildar or Naib-Tahsildar will take with him as assessors (1) the Mirab; (2) the Zaildar, or if the Zaildar is unable to attend, or is himself the Mirab, then any *Safedposh* of the same zail; and (3) any Lambardars of the neighbourhood not being personally interested, who may be chosen by the objector, and he will report their opinions as well as his own. The Deputy Commissioner

may authorize the canal Tahsildár to exercise the same functions in regard to the disposal of disputed entries as a Tahsildár or Náib-Tahsildár. If the amount in question exceeds Rs. 25, the Extra Assistant Commissioner will himself enquire into it on the spot.

10. If the Extra Assistant Commissioner himself, or on the report of the Tahsildár or Náib-Tahsildár or canal Náib-Tahsildár, with or without assessors as above, according to the amount involved, finds that any kharíf crops have wrongly been entered as "failed," he may add the proper charge, and he may also make any other corrections which are required. All orders must define field by field the areas which are charged or exempted. The Extra Assistant Commissioner will communicate his orders to the Tahsildár, who will correct the village totals furnished by the Patwári, and will direct the Patwári to correct his list of holdings accordingly, and to make similar corrections upon the slips given to the revenue payers.

11. The Extra Assistant Commissioner, after disposing, if possible, of all objections will, by the 15th of December, forward the list of demand to the Deputy Commissioner, and will report at the same time what progress has been made in the disposal of objections. The Deputy Commissioner will then issue orders to the Tahsildár to collect the canal revenue as shown in the amended village statements. Charges which are in dispute will not be collected until the dispute is decided.

12. The canal revenue will be collected in the same proportions for the kharíf and rabi seasons as are fixed for the land revenue of the village. It will be paid along with the cesses due upon it with the second instalment of each season.

13. Where the fixed land revenue of any land is assigned or shared between Government and assignees the canal revenue chargeable on the same land will also be assigned or shared as the case may be; provided that in the case of revenue-free assignments granted subsequently to the date of the introduction of the new assessments, the canal revenue will be entirely khálsa. The canal revenue on land included in the Mamdot jágír is shared between Government and the Jágirdár in the proportion of two-thirds and one-third respectively.

14. Refunds of any sums wrongly collected on account of canal revenue may be made by the authority of the Deputy Commissioner in the form of a deduction from the demand on the same village for the next season. The field Kanúngo will be responsible that in the next *báchh* the refund is credited to the proper person.

15. If at the time of rabi girdáwari the Patwári finds that a rabi crop has been grown in land which, being submerged at the time of the kharíf girdáwari, was not recorded as "*taraddadí nahri*," he will report the fact to the Tahsildár, who after informing the landholder, will order the area in question to be added to the next year's demand statement, or, if there is a dispute, will proceed as above directed in the case of disputes. In areas so added at the time of the rabi girdáwari, only so much as has successfully grown a crop will be included. If, uncultivated land, which was irrigated in the kharíf season be brought undercultivation and grow a crop in the rabi season, it will be dealt with in the same way. If, on the other hand, land which, though charged as "*taraddadí nahri*" remained too wet to be sown with a rabi crop, the sum charged on it may, under the orders of the Extra Assistant Commissioner, be deducted from the demand of the rabi season.

16. In the month of April, when the demand for the year has been finally determined, the Deputy Commissioner will report the amount, with details, to the Commissioner of the Division, and will submit a bill for the amount due as Zaildárs' fees at the rate of one per cent. on the demand for each zail. This bill, on being countersigned by the Commissioner, will be payable in the form of a deduction from the next rabi instalment of the canal revenue of the tahsil.

17. Collections on account of canal revenue will be entered in the Tahsíl and Treasury accounts as fluctuating land revenue.

(Sd.) E. B. FRANCIS,
Settlement Officer.

APPENDIX No. VI.

Alluvion and Diluvion Rules for Zira, Ferozepore and Muktsar Tahsils, Ferozepore District.

These rules apply to land which is ordinarily affected by the river floods. Where part only of a village is under the rules, the limits of that part have been marked on the map by a line. Land situated above that line is under fixed assessment, which will not be changed during the period of settlement on account of any changes in the cultivation until a reduction of the assessment be required on account of action of the river.

2. It is not intended that the limits above referred to shall be lightly changed; but if the Deputy Commissioner, upon the petition of the owners of any village, be satisfied that any considerable block of land has ceased to be benefited by inundation, he may order it to be removed from the application of the rules, and give it a fixed assessment at the dry rates stated hereafter. The limits of such block of land will be marked on the girdawari map, and a reference to the Deputy Commissioner's order will be given. Should such land afterwards regain the advantage of river inundation it may by the same authority be again brought under the rules. Where reduction of assessment of land under fixed assessment is required by river action the land will be brought under these rules.

3. The following is the schedule of crop rates to be used in making assessments :—

No.	Kind of crops.	Rate per kanál.	Rate per ghumáo.	Rate per acre.
		As.	As.	As.
I	All crops not named below—			
	(a) In Zira Tahsíl down to Khiyáli	2	16	19'36
	(b) In Zira Tahsíl below Khiyáli and Ferozepore down to Palla Megha.	1½	14	16'94
	(c) In Ferozepore below Palla Megha	1½	12	14'52
II {	Jowár and chari, moth, mung, kharsu rice, til, másh, barley, gram, rape, táramíra, linseed, melons.	1½	12	14'52
III	Masar, churál, ajwain, methi, senji	1	8	9'68
IV	Grazing land	1½ pie.	9 pies.	10'89 pies.

The *baráni* rate in Tahsíl Zira is 10 annas on all cultivated land, and in Tahsíl Ferozepore 9 annas, nothing being charged on uncultivated land.

4. The rate charged will be that for the highest class of crop which the land has shown itself capable of successfully producing. Thus, whenever land successfully produces a crop of a class chargeable at a higher rate than the rate before assessed on that land, the rate will be raised accordingly. But no reduction of assessment will be allowed on the ground of a crop of the lower class being grown in a subsequent year, unless it be proved that the land has since been injured by the action of the river, as, for instance, where the soil has been left too thin by the erosion of its upper surface or has been covered by a deposit of sand.

5. Where a crop chargeable at a higher rate than that hitherto paid is sown, but the yield is very poor, the land will be charged as if a crop of the next lower class had been successfully grown. When the crop is very bad for more than two years it should be considered whether the soil has not been lowered in quality by the action of the floods.

6. When land previously under fixed assessment is brought under the rules the appropriate crop rates will be applied to all cultivated land and grazing land without reference to the previous assessment.

7. The classification of land should not be too minute. If different parts of a survey number grow different crops, or if two or more crops are mixed, the whole area under crop should be charged according to the crop which occupies the largest area or which constitutes the largest part of the mixture. There should not be two different crop rates in the same number.

8. In reckoning the revenue no fractions of a kanál will be regarded. Any fraction under a half kanál will be neglected, and any fraction not under a half kanál will be treated as a whole kanál.

SPECIAL RULES.

9. If the land attached to a well which was assessed at a lump sum be lost by diluvion, a part in whole rupees of the well assessment will be remitted in proportion to the area of well land which has been lost, and the distribution of assessment of the well may be modified. If the well itself be lost, the whole assessment upon it will be remitted.

10. Land taken up for inundation canal works within any part of a village affected by these rules will be treated as if rendered unculturable by river action.

11. The same will apply when, owing to the village homestead having been washed away, cultivated land has to be taken up for a new homestead.

PROCEDURE.

12. In case of diluvion or *khalmar* the Patwári will chain the remaining part of fields which have been partly washed away, and will plot the position of the river bank on the girdáwari map by a red line, and will write at both ends of the line the word *burdi* and the English year. He will then take out the area of the remaining parts of these fields and will fill up khasra, Form B. *Khalmar* will be treated as diluvion except in Form D, where it will appear only as change of class.

13. (a). In case of alluvion, if the area gained is included in the girdáwari maps, the Patwári will plot a line thereon as in the case of diluvion, writing at both ends the word *barámad* and the English year. He will then fill up the khasra, Form J.

(b). If the land gained is not included in the girdáwari map, but was included in the settlement map or in any subsequent map, and if by the custom of the village the former boundaries of properties are to be restored, the Patwári, after plotting the line of the river by prolonging the squares up to the deep stream (or up to the boundary of the village, if the deep stream is not the boundary), will trace the fields from the proper map on to his girdáwari map and proceed as above.

(c). If the land gained has not before been included in the village, or if it be not the custom to restore the former boundaries of properties, the Patwári will map the new land by extending the squares as above, and will divide the new land into numbers corresponding with the limits of the squares. New maps will be plotted upon regular mapping sheets, and the index map will be enlarged so as to include the new sheets.

14. Whether the field numbers are according to squares or according to former boundaries of properties, sub-numbers will not be made for plots of new cultivation nor the temporary cultivating holdings. The premature record of cultivators' sub-numbers should be avoided, for such divisions are often afterwards obliterated and re-cast, and their introduction into the map and annual papers will complicate all future business.

15. If part of the number was cultivated in the previous year, but the limits of the previous cultivation cannot be distinguished, the whole area under cultivation within the survey number may be measured anew and the previously cultivated area may be deducted.

16. Tracings will be filed of the fields lost and gained by diluvion and alluvion and of the newly cultivated fields, the limits of new cultivation being shown on the tracing by red-dotted lines and by writing the word *nautor* within the spaces newly cultivated.

17. No map is required for change of class other than new cultivation; the entries in Form Z will be sufficient. When a crop is very poor, the word *nákis* will be written after the area of the crop in Form Z or in Form J, as the case may be. The entries in Form Z will also be sufficient record for any land which has fallen out of cultivation. Grazing lands will be entered in Form Z, and no other record of them is required.

18. Form Z will be preserved continuously in a bound volume for the whole period of settlement. A copy will be filed every year of those numbers only of which the assessment is changed.

19. When the alluvial land extends to a considerable distance from the village base marks, supplementary base marks should be made in convenient positions near the river. These may consist of large posts deeply planted in the ground and surrounded by a ditch; they should be so permanent and conspicuous that when seen they cannot possibly be mistaken.

20. When the measurements are to be inspected by an officer, the Patwári should plant flags at all the corners and in the centre of each of the squares in which measurements have been made.

21. A list of fully assessed fields will be entered at the opposite end of Register (Z) and any fields which from time to time become fully assessed will be added to the list, and those no longer fully assessed will be struck out. This list will be totalled every year.

22. The whole dialluvion file should be prepared on Lucknow paper, stitched at the back in book form. The tracings of maps will be on sheets not exceeding the size of a regular mapping sheet, and they will be placed in an envelope the full size of the file and will not be folded more than twice.

FORM A.—The Map.
B.—Diluvion Khasra.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Serial No.	No. of holding.	Khasra No.	Tarf or Patti.	Owner.	Tenant.	Former area—Kanals.	LAND REMAINING.			LAND LOST.			REMARKS.
							Dimensions.		Area.	Area.	Soil (Kism zamín)	Revenue class (Kism parta).	
							Length.	Breadth.					

NOTE.—(1). *Khalmar* areas will be noted as such in the remarks column.
(2). Total column 11, and under the total show details of soil and class.

FORM J.—Khasra of Alluvion and new Cultivation (*Barámadwa Nautor*).

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Serial No.	No. of holding.	Khasra No.	Tarf or Patti.	Owner.	Tenant.	DIMENSIONS.		Area.	FORMER.		PRESENT.				REMARKS.
						Length.	Breadth.		Soil.	Revenue class.	Soil.	Crop.		Revenue class.	
												Kharif.	Rabi.		

NOTE.—Total columns 10 and 12, and give details of soil and class.

FORM D.—Abstract Statement of Changes (*Milán Rakha Bard Barámad*) ascertained at end of Kharif
Sambat 19 -19 (A. D. 18 -18).

1	2	3	4	5	6	7	8	9	10	11	12	13
Alphabetical No.	Name of village.	DETAIL.	Land not assessed.	LAND UNDER IN-UNDATED RATES.		LAND UNDER FIXED DRY ASSESSMENT.					REVENUE NOW ASSESSED FOR NEW AGRICULTURAL YEAR.	
				Area.	Amount.	Class IV at full rate.	Class III at 12 annas per ghumáo.	Class II at 8 annas per ghumáo.	Class I at 9 pies per ghumáo.	Total revenue and area of inundated land.	For the Kharif, Sambat 19- 19.	For the Rabi, Sambat 19
		By last year's papers ending Rabi, Sambat 19	gh. k.	gh. k.	Rs. a p.	gh. k.	gh. k.	gh. k.	gh. k.	gh. k.	Rs.	Rs.
		DEDUCT.										
		1. Diluvion ...										
		2. Land of which rate has been changed for better.										
		3. Do. for worse.										
		Total ...										
		ADD.										
		1. Alluvion ...										
		2. Land of which rate has been changed for better.										
		3. Do. for worse.										
		Total ...										
		Area and revenue ascertained for Kharif, Sambat 19, and Rabi, Sambat 19										

NOTE.—(1). In the totals of columns 7--10 enter revenue of each class under the areas, and in column 11 put totals of both area and revenue.
(2). If the village is entirely under the dialluvion rules, columns 5 and 6 will be blank. If not, then at the foot of column 11 add the totals of columns 5 and 6.

FORM H.—*Alluvion*, and *Diluvion* (Burd Barāmad) *Khewat*, prepared at end of *Kharif*,
Sambat 19 -19 (A.D. 18 -18).

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Khewat No. in last Jamabandi.	Khatani No.	Name of Khewatdar, including name of tenant, where necessary.	Amount of revenue of each holding according to last year's papers.	Khasra No.	FORMER.			PRESENT.			DIFFERENCE.		Amount of revenue for each holding for new year.	REMARKS.
					Area.	Rate.	Revenue.	Area.	Rate.	Revenue.	Increase.	Decrease.		

NOTE.— This Statement will be in the same detail as is usual in the revenue columns of the Jamabandi.



FORM Z.—Register of Fields assessed below full rates, and at full rates.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Khatera No.	Name of proprietor and tenant briefly.	SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .		SAMBAT 19 .	
		Area cultivated.	Kharrif.	Rabi.	Rate.	Area cultivated.	Kharrif.	Rabi.	Rate.	Area cultivated.	Kharrif.	Rabi.	Rate.	Area cultivated.	Kharrif.	Rabi.	Rate.	Area cultivated.	Kharrif.	Rabi.	Rate.	Area cultivated.	Kharrif.	Rabi.	Rate.

E. B. FRANCIS,

Settlement Officer.



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